

PHYLLODOCIDS (ANNELIDA: POLYCHAETA) OF BELIZE, WITH THE DESCRIPTION OF THREE NEW SPECIES

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Abstract.—Phyllodocidae (polychaetes) from Belize are reported. Eight species are treated in detail. Of these, 3 are newly described: *Eumida muriatica*, *Sige belizensis*, and *Nereiphylla mimica*. *Pterocirrus foliosus* (Treadwell, 1924) is redescribed and the identities of *Hesionura elongata* (Southern, 1914), *Mystides borealis* Théel, 1879, and *Phyllodoce erythrophylla* (Schmarda, 1861) are discussed. Eight additional species are recognized, but not treated in detail due to the lack of sufficient material. Together with the previously recorded *Phyllodoce panamensis* Treadwell, 1917, 17 species are now known from Belize.

The presence of a Smithsonian field station on the island of Carrie Bow Cay in Belize has led to great improvements in our knowledge of the polychaete fauna of the western Caribbean Sea. Notable taxonomic contributions are by Fauchald (1980, Onuphidae), Fitzhugh (1983, Sabellidae), Young & Kritzler (1987, Terebellidae), Russell (1989a, 1989b, Syllidae), and Solis-Weiss & Fauchald (1989, Orbiniidae).

To date, the only published account of the Phyllodocidae of Belize is by Young & Young (1982), who reported the presence of three species: *Phyllodoce (Anaitides) panamensis* Treadwell, 1917, *Hesionura elongata* (Southern, 1914) and *Eulalia viridis* (Linnaeus, 1767).

During October and November of 1988 I visited Carrie Bow Cay. Several species of phyllodocids were collected, three of which were found to be new to science. This prompted the study of previously collected, undetermined phyllodocid material held at the National Museum of Natural History, Washington, D.C. (USNM). Sixteen species were found, eight of which are treated in detail below.

Materials and Methods

The 1988 collections were made near the following islands: Carrie Bow Cay, South

Water Cay, Tobacco Cay, the Cocoas (east of northern end of Blue Ground Range), and the Sand Bores (east of the Cocoas). Earlier collected material had also been taken near Twin Cays and at Glover's Reef (for the locations of these islands see Rützler & Macintyre 1982). Details on all stations are given in the appendix. For the individual species below, material examined (for Belizean animals only) is indicated by the station numbers, in each case followed by the number of specimens from that station in parentheses. Data on non-Belizean material used for comparative purposes are given in the remarks section where appropriate.

Coral samples taken in 1988 each consisted of approximately 3.5 l of coral rubble with a drained weight of about 4.5 kg. Rubble was mechanically broken into smaller pieces and shaken in seawater to obtain live specimens. The pieces were then placed in a large bucket of seawater to which a few drops of clove oil were added. After about 12 hours, each sample was fixed in buffered 2% formalin. Individual pieces of coral rubble were subsequently washed in another bucket of seawater, where obvious specimens were removed with forceps, and the contents of both buckets then filtered through a 200 μ m sieve. The material was once again fixed in 2% formalin and two

days later was washed and transferred to 70% alcohol.

Sand samples were aerated from below causing specimens to rise into the water column, from which they were drained and sieved.

Specimens for SEM were critically point dried and sputter coated with platinum. Observations were made with a Cambridge Stereoscan 250 MK2.

All descriptions refer to animals from Belize. In the tentacular formulae used in description S = setae, 1 = tentacular cirrus, N = normal (ventral) cirrus, and 0 signifies the lack of either setae or cirrus. Types and other specimens are deposited in USNM and in the Zoological Museum of the University of Copenhagen, Denmark (ZMUC).

Family Phyllodocidae Ørsted, 1843

Genus *Hesionura* Hartmann-Schröder, 1958

Hesionura coineau (Laubier, 1962)

Fig. 1

Mystides (Pseudomystides) coineau Laubier, 1962:461, fig. 1a–g.

Eteonides coineau. — Hartmann-Schröder 1963:222, figs. 30–32.

Hesionura elongata. — ?Day 1973:19–20, fig. 3k–m. — Gardiner 1975:106, fig. 6b–d. — Young & Young 1982:119. — ?Blake 1988:248, fig. 2a–d. — Eibye-Jacobsen 1991:532. [Not *Mystides (Mesomystides) elongata* Southern, 1914].

Hesionura sp. A Gathof, 1984:19–12, fig. 19-8a–c.

Material examined. — F-39 (3); F-41 (3); DEJ-1 (9, 1 used for SEM); DEJ-2 (1); DEJ-5 (8); DEJ-8 (1); DEJ-15 (3); DEJ-22 (14, 1 used for SEM).

Description. — Unless otherwise indicated based on largest specimen from st. DEJ-1. Length 12.5 mm (19 mm long in life), width excluding setae 0.5 mm, with 164 setigers (posteriorly incomplete).

Prostomium varying from semiglobular, slightly wider than long, to conical, longer

than wide (Fig. 1A); 4 subulate antennae present, as long as prostomium in life; obvious eyes lacking; several specimens with 2 imbedded pigment spots of varying position and size on dorsoposterior area of prostomium; nuchal organs small, in dorsolateral depressions at posterior border of prostomium.

Proboscis densely covered with dark brown papillae arranged in 12 longitudinal rows (Fig. 1B); each papilla (diameter about 20 μ m) crowned with claviform structures (diameter about 250 nm) apparently arranged in 2 concentric arcs (posterior on everted proboscis; observed using SEM); 7 oral papillae present, each about 50 μ m in diameter, lacking micropapillae (only 1 specimen examined; st. DEJ-22).

Tentacular formula 1 + 0 1/1 + S 0/N; all tentacular segments fully developed, segment 1 weakly delineated from prostomium. Tentacular cirri of segment 1 subulate, reaching to segment 4 or 5; dorsal tentacular cirri of segment 2 subulate, reaching to segment 6; ventral tentacular cirri of segment 2 very short, cylindrical, not flattened as ventral cirri of following segments (viewed in SEM).

All dorsal cirri elongate oval, with drawn-out tip (Fig. 1C). Each neuropodium with 4 or 5 spinigerous compound setae; uppermost seta with distally trifid shaft (Fig. 1D); lowermost seta with distally bifid shaft (Fig. 1G); middle setae (2 or 3) with distally bifid shaft, each tooth with smaller, medial tooth (Fig. 1E–F); shafts of uppermost and lowermost setae notably thicker than those of middle setae, especially on posterior segments; distal articles of middle setae most elongate. All ventral cirri more elongate and larger than dorsal cirri, extending beyond neuropodial tips (Fig. 1C). Anal cirri very long and thin, about 15 times as long as width at base (Fig. 1H).

Living animals green, some very pale, with darker green spots (glands?) on dorsal and ventral cirri; green pigment becoming brown following preservation. Several specimens

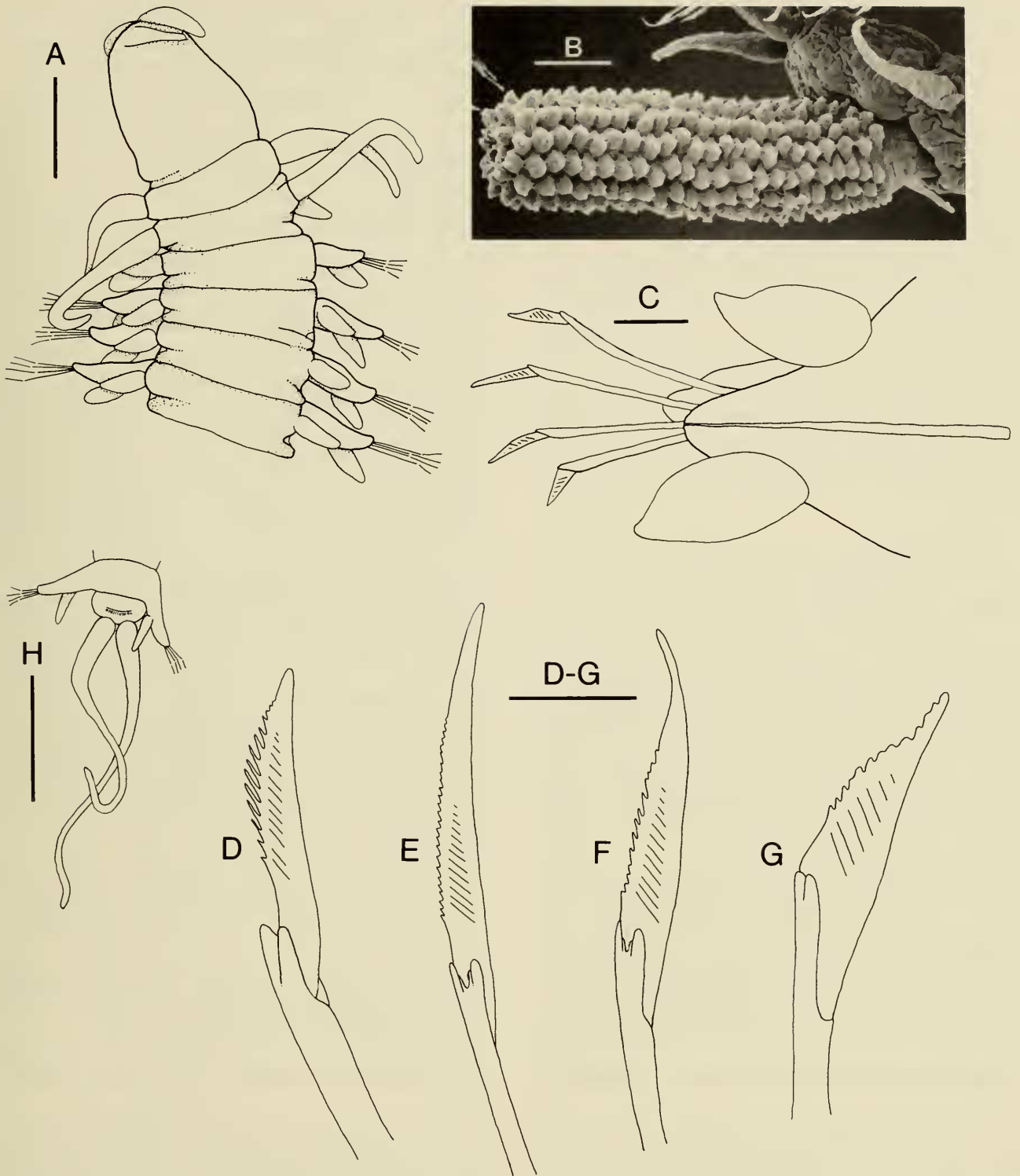


Fig. 1. *Hesionura coineai* (Laubier, 1962). A. Anterior end, dorsal view. B. Proboscis, lateral view, SEM photograph. C. Parapodium of setiger 53 (from animal with 164 setigers), posterior view. D. Uppermost seta, lateral view. E. Next to uppermost seta, dorsolateral view. F. Next to lowermost seta, dorsolateral view. G. Lowermost seta, dorsolateral view. H. Pygidium with anal cirri, ventral view. A, D-G: DEJ-1, ZMUC. B, H: DEJ-22, ZMUC. C: DEJ-1, ZMUC. Scales: A = 0.1 mm; B = 50 μ m; C = 25 μ m; D-G = 10 μ m; H = 0.1 mm. A, D-H redrawn from SEM photographs, D-G from same parapodium.

containing blue-green eggs (brown in alcohol) with diameter about 80 μm . Undisturbed living animals with very active movements.

Remarks.—These specimens have previously been reported (Eibye-Jacobsen 1991: 532) as *Hesionura elongata* (Southern, 1914), but they do not conform completely to any known species in this genus. Although very small eyes were present on living specimens, they have mostly faded in alcohol. This is probably also the case with many previous reports of this genus, in which living material may not have been observed. I regard the presence or absence of eyes as an unreliable character in *Hesionura*.

Judging from the original descriptions, setae of the type described here (i.e., all compound, uppermost seta trifid, remaining setae bifid, distal articles of same general length) are to be found only in *H. coineau* (Laubier, 1962) and *H. fragilis* (Hartmann-Schröder, 1958). In *H. fragilis* the ventral cirri are very elongate, whereas the cirral morphology in *H. coineau* resembles that shown here on Fig. 1C. Belizean animals differ from *H. coineau* only in pigmentation (red according to Laubier). Furthermore, Laubier stated that the proboscideal papillae in *H. coineau* are irregularly distributed. However, the fact that these papillae are arranged in longitudinal rows on the animals treated here was not recognized until they were studied using the SEM (Fig. 1B).

Hesionura elongata (Southern, 1914) was described from Ireland and has been reported from North Carolina (Day 1973, Gardiner 1975) and Massachusetts (Blake 1988). Gathof (1984) reported *Hesionura* sp. A from the Gulf of Mexico (Florida). Examination of the material studied by Gardiner (USNM 51018, 52870) and Gathof (USNM 89968, 89969, 89970), as well as unpublished specimens from South Carolina (USNM 56596, 59325, 59326) showed that the species involved was almost certainly the same as that found in Belize.

All of these worms, including those reported by Blake, differ from *H. elongata* as originally described and later reviewed by Hartmann-Schröder (1963), in having the uppermost seta trifid and all setae compound. However, in specimens from northern Europe this is also the case (pers. obs. using differential interference contrast microscopy; see also Pleijel & Dales 1991:66–67 as regards the uppermost seta). Some confusion with *H. augeneri* (Friedrich, 1937) may be involved, but it is unclear whether these two species are separate. I thus agree with Blake (1988:249) that an oversight may account for the description of this seta as bifid in *H. elongata*. However, in my opinion the North American animals cannot be referred to Southern's species, because they lack strongly elongate ventral cirri.

Distribution.—Belize: only taken around island of Carrie Bow Cay, in sand and *Halimeda* gravel, as well as in rubble of *Agaricia*, at depths of 0.6–12 m. Gulf of Mexico (Gathof 1984). South Carolina. North Carolina (Gardiner 1975). Massachusetts (Blake 1988)? Type locality: Racou, France, Mediterranean Sea (Laubier 1962).

Genus *Mystides* Théel, 1879

Mystides near *borealis* Théel, 1879

Mystides borealis.—Gathof 1984:19–10, fig. 19–6.—?Blake 1988:251, fig. 3a–b. [Not *Mystides borealis* Théel, 1879.]

Material examined.—DEJ-15 (1); DEJ-19 (1).

Description.—Unless otherwise noted based on specimen from st. DEJ-19. Length 5.2 mm, 0.35 mm wide excluding setae, with 49 segments (posteriorly incomplete). Specimen from st. DEJ-15: 3.0 mm long, 0.26 mm wide, with 39 segments (complete).

Prostomium round with 4 very thin filiform antennae, at least as long as prostomium, eyes large, dark red to black, possibly with lenses. Proboscis not everted.

Tentacular formula 1 + S 1/1 + S 0/N; all segments separate and fully developed, with vague segmental borders. Tentacular

cirri all claviform with thin filiform tips; dorsal tentacular cirri of segment 2 longest.

Dorsal cirri oval, thick, with well-developed cirrophores. Neuropodia each with 6 or 7 setae. Setal rostrum with about 5 distal teeth. Ventral cirri oval, more elongate than dorsal cirri. Anal cirri resemble dorsal cirri of middle segments (DEJ-15); pygidial papilla not observed.

Living animals with colorless dorsum and venter. Dorsal, ventral, and tentacular cirri, and prostomium anterior to eyes with orange pigment and dark red spots, largest on dorsal and ventral cirri; several spots ventrally on segments 1–4 and on posterolateral portion of prostomium. Smaller specimen lighter colored with light yellow in place of orange pigment, only few reddish brown spots and dark red eyes. Pigmentation fades very little in alcohol. Larger specimen an immature male. Living animals with very slow movements.

Remarks.—Judging from the original description of *Mystides borealis*, the specimens from Belize differ in body length, number of setae per neuropodium (although both may be due to age differences), pigmentation, and the size of the eyes. Eyes are apparently smaller in *M. borealis* according to Théel (1879: fig. 29). Unfortunately, the type material of this species has been dried (Fredrik Pleijel, pers. comm.) and newly collected material from the type locality (Novaya Zemlya, Arctic Ocean) must be studied before worldwide reports can be correctly appraised.

The two specimens reported on here probably belong to the same species as that described by Gathof (1984) from the Gulf of Mexico as *Mystides borealis*.

Blake (1988:251–252, fig. 3a–d) reported on specimens from George's Bank (North Atlantic) which he referred to *M. borealis* Théel, 1879 and *M. caeca* Langerhans, 1880. The specimens from Belize agree with Blake's description of *M. borealis* in body dimensions, setal morphology, and the presence of eyes. They differ in lacking obvious lenses, in having dorsal cirri that are

not flattened, and in having pigmentation more reminiscent of that described by Blake for *M. caeca* (i.e., with orange pigment).

The Belizean animals differ from the type specimens of *Mystides viridis* Webster & Benedict, 1887 (type locality: Eastport, Maine) in body proportions (thinner at a comparable length), pigmentation, the larger eyes, and the attachment of dorsal cirri to obvious cirrophores (Mary E. Petersen, pers. comm.).

Distribution.—Both specimens from Belize taken in sand samples from east of Carrie Bow Cay at depths of 4.5 and 16 m respectively. Northeastern Gulf of Mexico (Gathof 1984). North West Atlantic (Blake 1988)?

Genus *Phyllodoce* Lamarck, 1818

Phyllodoce erythrophylla (Schmarda, 1861)

Fig. 2

Lepadorhynchus erythrophyllus Schmarda, 1861:88, figs. a, b, pl. 29, fig. 232.

Phyllodoce (Anaitides) erythrophylla.—Augener 1925:23–24, 46.

Anaitides erythrophyllum.—Hartman 1944: 15.

Anaitides erythrophyllus.—Hartman 1951: 33.—Fauchald 1977:13.

Phyllodoce erythrophylla.—Mountford 1991:159–161, fig. 1a–c.

Phyllodoce cf. erythrophylla.—Eibye-Jacobsen 1991:535, fig. 2a.

Material examined.—R-23.4.74 (1); JDF-47-2 (1); GH-3 (1); GH-6 (1); GH-11 (3); GH-22 (1); GH-26 (1); GH-36 (2); GH-38 (4); AC-509 (3); AC-520 (3); K-35 (4); K-36 (3); K-43 (1); K-49 (3); K-62b (1); K-64 (1); K-70c (1); K-74 (2); K-96 (1); K-107 (1); RC-1 (1); RC-5 (1); RC-7 (1); RC-15 (1); RC-26 (1); RC-32 (1); RC-33 (1); RC-34 (1); RC-37 (1); RC-39 (2); RC-40 (2); RC-59 (1); RC-80 (1); RC-82 (1); RC-92 (2); RC-93 (1); RC-94 (1); RC-98 (1); RC-100 (2); RC-119 (1); F-65 (1); F-116 (1); F-265 (1); F-269 (4); F-275 (1); F-279 (1); F-282 (4, 2 used for SEM); DEJ-6 (1); DEJ-12 (1); DEJ-17 (1).

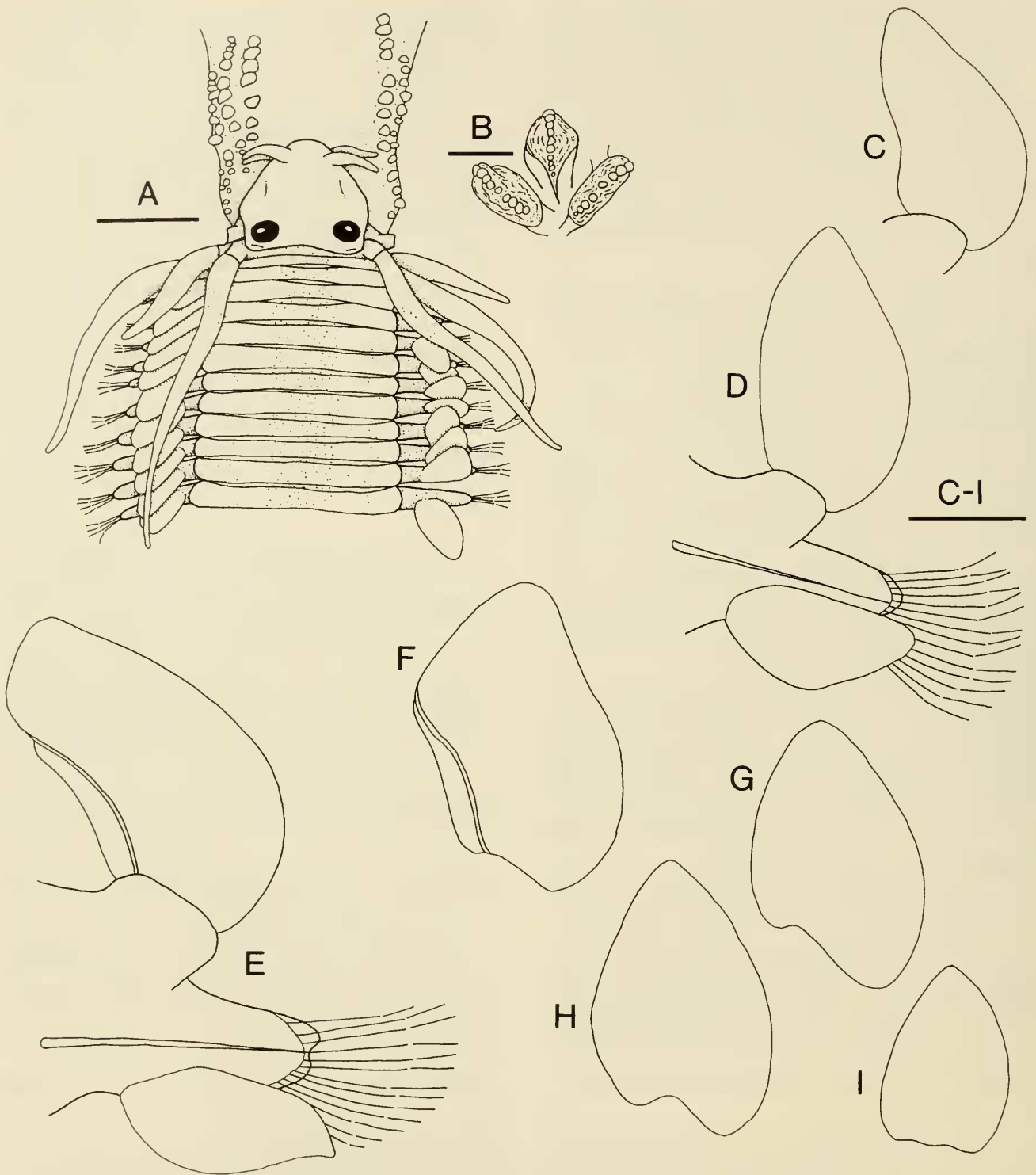


Fig. 2. *Phyllodoce erythrophylla* (Schmarda, 1861). A. Anterior end, dorsal view (rows of papillae on proboscis appear merged from this angle). B. Three oral papillae. C. Dorsal cirrus of setiger 6. D. Parapodium of setiger 36, posterior view. E. Parapodium of setiger 75, posterior view. F. Dorsal cirrus of setiger 89. G. Dorsal cirrus of setiger 122. H. Dorsal cirrus of setiger 137. I. Dorsal cirrus of setiger 222. A, C-I: F-279, USNM. B: F-282, USNM. Scales: A = 0.5 mm; B = 0.1 mm; C-I = 0.25 mm. B redrawn from SEM photograph.

Description. — Unless otherwise noted based on specimen from st. F-279. Length 54 mm, width excluding setae 1.6 mm, with about 270 setigers (animal almost complete).

Prostomium pentagonal or cordiform, slightly broader than long; nuchal papilla visible on most specimens (concealed on specimen from st. F-279; Fig. 2A) in median dorsoposterior concavity; 4 antennae pres-

ent, all subulate and very short; eyes oval, dark red on living animals, dark reddish brown after preservation, with well-developed lenses; nuchal organs lateral, just anterodorsal to cirrophores of first pair of tentacular cirri.

Basal sixth of everted proboscis with 6 longitudinal rows of papillae on each side, without mediodorsal row; each row with up to 13 papillae (e.g., from dorsal to ventral: 10, 12, 13, 12, 10, and 12 on right side—9, 12, 12, 11, 10, and 10 on left side); individual papillae light reddish brown, pigmentation strongest on posterior surfaces; papillae compressed (about $60 \times 25 \mu\text{m}$) with posterior surface appearing glandular (irregularly convoluted as viewed in SEM); distal $\frac{5}{6}$ of proboscis with 6 longitudinal rows of large rounded tubercles, ventral ones most strongly developed; distal opening surrounded by 17 (rarely 16) oral papillae, each laterally compressed (about 140 by $50 \mu\text{m}$) with medial row of about 10 wartlike structures (15 – $20 \mu\text{m}$ in diameter) along exterior and distal surface (Fig. 2B).

Tentacular formula $1 + 0 \ 1/1 + 0 \ 1/N$; all segments separate; setae from segment 4. Dorsal portion of segment 1 and part of segment 2 covered by posterior part of prostomium. Tentacular cirri subulate, with those of segment 1 and ventral cirri of segment 2 reaching posteriorly to segment 8–9; dorsal cirri of segment 2 longest, reaching to segment 14–16; dorsal cirri of segment 3 reaching to segment 12–13 ($n = 13$). On specimens with everted proboscides dorsal cirri of segment 3 arising more ventrally than ventral cirri of segment 2.

Dorsal cirri of following segments changing markedly in shape along body; those of anterior segments blunt, asymmetrically lanceolate (Fig. 2C–D), gradually becoming quadrangular with ventral/outer margins longest (Fig. 2E), then shortening towards middle of body (Fig. 2F), before becoming blunt, asymmetrically cordiform (Fig. 2G–H), and finally almost symmetrical (Fig. 2I). Dorsal cirri from about segment 15 with

strongly developed cirrophores and single ciliary bands along inner margins of posterior surfaces; latter most easily seen on middle segments (Fig. 2E–F). Supra-acicular lip of neuropodial presetal lobe larger and longer than sub-acicular lip, especially on middle and posterior segments. Neuropodium with up to 18 setae; rostrum of setal shaft with well developed heel and many acuminate teeth, increasing in size toward tip (see Eibye-Jacobsen 1991: fig. 2a, SEM photograph). Ventral cirri longer than neuropodium throughout; oval to triangular with tip pointing laterally on anterior segments (Fig. 2D), ventrolaterally on middle and posterior segments (Fig. 2E). Anal cirri not observed.

Living animals yellowish with brown pattern on dorsum; pigment on anterior segments concentrated medially, forming broad diffuse mediodorsal longitudinal band, becoming weaker on middle segments (concentrated medially between segments and mediolaterally on each segment; “checkerboard” pattern), and weaker still on posterior segments, predominantly distributed along medial posterior edge of each segment. Prostomium pale apart from dark brown area at each posterolateral corner (Fig. 2A). Dorsal cirri on anterior segments pale, gradually becoming dark yellow or reddish, then reddish brown on posterior segments. Venter, ventral cirri and neuropodia pale. Brown pattern on dorsum becoming very dark on preserved animals, often almost black, dorsal cirri becoming yellowish orange on middle segments, reddish brown on posterior segments.

Remarks.—Mountford (1991) studied the type material of *P. erythrophylla* and a large number of specimens from various localities in the Atlantic Ocean, Gulf of Mexico, Caribbean Sea, and Western Pacific. She recognized Schmarda's species for the holotype only, taken off the south coast of Jamaica, and referred all other material to *P. madeirensis* Langerhans, 1880.

Mountford separated *P. madeirensis* from

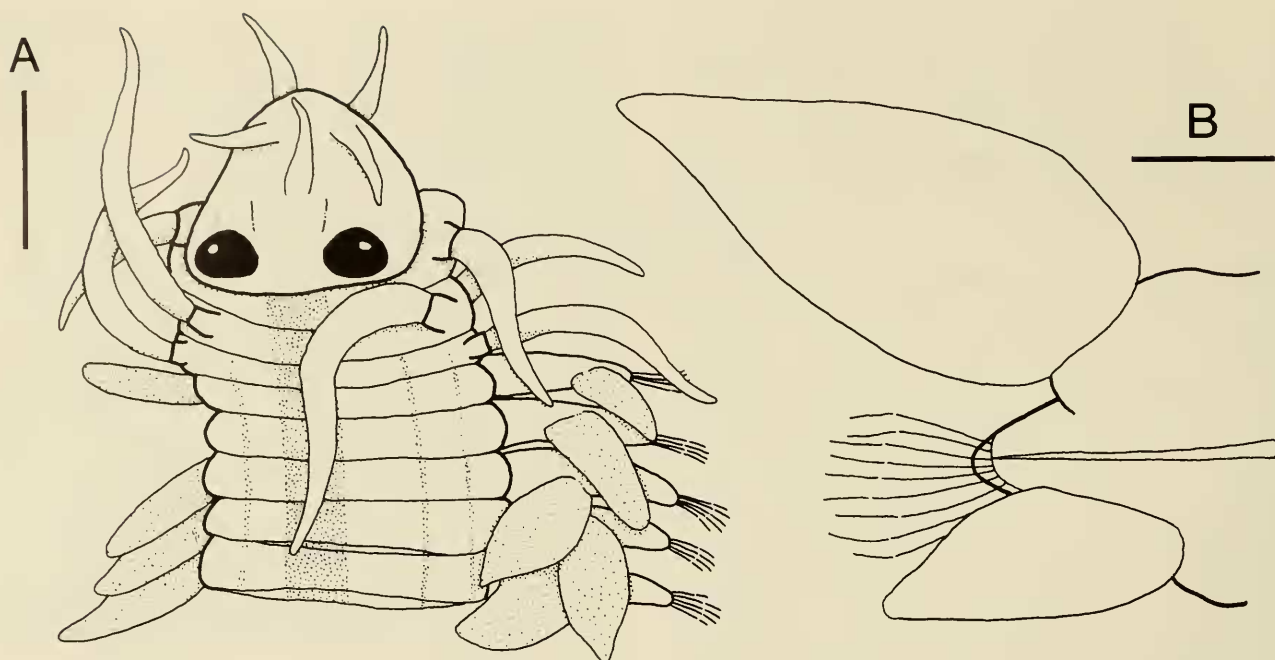


Fig. 3. *Eulalia myriacycla* (Schmarda, 1861). A. Anterior end, dorsal view. B. Parapodium of setiger ca. 250 (from animal with about 530 setigers), posterior view. DEJ-13, ZMUC. Scales: A = 0.25 mm; B = 0.1 mm.

P. erythrophylla exclusively on the presence of brown transverse bands on the dorsum of the former, lacking on the latter, as well as the reported color of live animals. However, her information on the pigmentation of live specimens (dorsum purple, dorsal cirri red) is taken from the original description. According to Langerhans (1880:308), live *P. madeirensis* are colorless as juveniles, dull green as adults. Although living specimens from Belize have a coloration unlike either of these descriptions, preserved animals correspond well to Mountford's description of *P. madeirensis*. Schmarda may have exaggerated the brilliance of pigmentation on his specimen of *P. erythrophylla*, as on several other of the worms shown in his plates.

In my opinion, the Belizean animals most closely resemble Schmarda's species because of their consistent lack of a medio-dorsal row of papillae on the proximal part of the proboscis ($n = 35$). Such a row, containing about six papillae, is present in *P. madeirensis* (Langerhans 1880:308). Gathof (1984:39) reported that his specimens of *P. madeirensis* from the Gulf of Mexico lacked this mediodorsal row. However, ex-

amination of a voucher specimen (USNM 89986) showed it to be present. These papillae are also present on specimens from North Carolina (Gardiner 1975:115 and fig. 7q). Much confusion still exists as to the true identity of *P. erythrophylla* and its correct separation from *P. madeirensis* (see discussion in Mountford 1991:165–166).

Distribution.—Found in Belize in rubble of *Agaricia agaricites*, *Acropora cervicornis*, and *Porites porites* at depths of 0–36 m. Further reports from the Caribbean Sea: southern Jamaica, on coral reef (Schmarda 1861:88); Colombia, Bahia Honda (Hartman 1944:15); Panama, Galeta Reef (Fauchald 1977:13). Also reported from southern Florida in the Gulf of Mexico, associated with reefs (Hartman 1951:33).

Genus *Eulalia* Savigny, 1822

Eulalia myriacycla (Schmarda, 1861)

Fig. 3

Notophyllum myriacyclum Schmarda, 1861: 87, figs. a, b, pl. 29, fig. 233.

Myriocyclus schmardae Grube, 1880:208.

Eulalia myriacycla.—Augener 1925:24–25, 46.

Eulalia myriacyclum. — Hartman 1944: 16. — Hartman 1951:33–34. — Fauchald 1977:14.

Eulalia quinquelineata Treadwell, 1901:192, figs. 27–29. — Treadwell 1924:9.

Material examined. — R-23.4.74 (2); R-2.5.74-2 (2); R-4.5.74-3 (1); JDF-23-2 (1); RC-98 (fragment); F-45 (1); F-48 (1); F-116 (fragment); F-279 (1); DEJ-4 (1); DEJ-13 (1); DEJ-20 (1).

Description. — Unless otherwise noted based on specimen from st. DEJ-13. Length 110 mm (specimen from st. JDF-23-2 about 150 mm long), width excluding setae and dorsal cirri 0.7 mm, with about 530 setigers.

Prostomium rounded conical, slightly broader than long (Fig. 3A). Five antennae present, all of same length, median one inserted halfway between eyes and anterior border of prostomium. Eyes large, dark red on living animals, reddish brown after preservation, with well-developed lenses. Proboscis densely covered with diffusely distributed papillae (diameter about 30 μ m); oral papillae not observed.

Tentacular formula 1 + 0 1/1 + 0 1/N; setae present from segment 4 on large individuals, from segment 3 on smaller animals (e.g., specimen from st. DEJ-20, about 15 mm long); all segments separate and fully developed dorsally. Tentacular cirri subulate, except ventral ones of segment 2, which may be slightly flattened; cirri of segment 1 and ventral cirri of segment 2 reaching to segment 5, dorsal cirri of segments 2 and 3 reaching to segment 8.

Dorsal cirri of middle segments elongate cordiform to lanceolate, distally acuminate (Fig. 3B), on anterior segments less and on posterior segments more elongate. Neuropodial presetal lobe with poorly developed supra- and sub-acicular lips, more or less conical. Neuropodia of middle segments each with 7 to 9 setae. Setal rostrum strongly inflated, without heel, with 2 large distal teeth, of the *E. viridis* type (see Eibye-Jacobsen 1991:537). Distal article of seta short

and slender. Ventral cirri triangular, almost acuminate distally, longer than neuropodium (Fig. 3B). Anal cirri elongate oval, distally rounded, and slightly flattened, about 4 times longer than broad. Pygidial papilla absent.

Living animals yellowish with 5 dark brown to black longitudinal lines on dorsum (Fig. 3A), pattern becoming weaker posteriorly; median line strongest, mediolateral lines weakest. Similar pattern present on venter, although weaker and lacking mediolateral lines. Dorsal, ventral, and anal cirri yellow, often densely covered with small dark reddish brown pigment spots, especially concentrated distally. Pigmentation fades only slightly on preserved animals.

Remarks. — In the original description of this species, Schmarda (1861:87) indicated that four eyes and four antennae were present. Both points were corrected by Augener (1925:25) after study of the two type specimens. According to Fredrik Pleijel (in litt.) this material, which was deposited in the Zoological Institute of Vienna, may now be lost. Augener's case for the synonymy of Schmarda's species and *E. quinquelineata* Treadwell, 1901 is very convincing, and was also followed by Hartman (1951:33). The holotype of *E. quinquelineata* (Puerto Rico: Hucares, 13 Feb 1899, S/S *Fish Hawk*, USNM 15922) resembles exactly the original illustration of *Eulalia myriacycla* (Schmarda 1861: pl. 29, fig. 233) and clearly belongs to the same species as that taken in Belize.

Schmarda had a specimen that was over 300 mm long with 1020 segments, whereas the holotype of *E. quinquelineata* is even larger, 450 mm long with "at least 1,300 segments" (Treadwell 1901:192).

The genus *Myriocyclus* [sic] was erected by Grube (1880:208) for *Notophyllum myriacyclus* Schmarda based on characters later proven to be incorrectly observed (Augener 1925:24–25). Grube renamed the species *M. schmardae*. In agreement with Hartman (1959:155), *Myriocyclus* is here

considered a junior synonym of *Eulalia* and *M. schmardae* a junior synonym of *E. myriacycla*.

In the original illustration (fig. 28) of a parapodium of *E. quinquelineata*, the size of the neuropodial presetal lobe and ventral cirrus and the shape of both these organs and that of the dorsal cirrus are misrepresented (checked on holotype). These organs match closely the original description of *E. myriacycla* and Fig. 3B here.

Young & Young (1982:119) reported a single specimen of *E. viridis* (Linnaeus, 1767) from the lagoon east of Carrie Bow Cay. No details were given and I have not had the opportunity to study the specimen. This report may refer to *E. myriacycla*, as it is of a similar size and general appearance, although it differs noticeably in pigmentation.

Distribution.—Found in Belize in rubble of *Acropora palmata* and *Porites porites* at depths of 0–16 m. Further reports from the Caribbean Sea: Jamaica, on coral reef (Schmarda 1861:87); Puerto Rico, Hucares (Treadwell 1901:192); Lesser Antilles (Treadwell 1924:9); Venezuela, Cubagua Island (Hartman 1944:5); Panama, Galeta Reef (Fauchald 1977:14). Also reported from the Gulf of Mexico (southern and northwestern Florida), associated with reefs (Hartman 1951:33–34).

Genus *Eumida* Malmgren, 1865

Eumida muriatica, new species

Fig. 4

Eumida sp.3 Eibye-Jacobsen, 1991:532, fig. 2b.

Material examined.—GH-36 (3); K-33 (1); K-36 (1); K-43 (2); K-47 (2); K-53 (1); K-107 (1); RC-1 (13); RC-3 (7); RC-6 (2); RC-7 (1); RC-8 (7); RC-9 (1); RC-10 (1); RC-12 (1); RC-17 (1); RC-19 (2); RC-32 (1); RC-34 (1); RC-36 (fragment); RC-40 (1); RC-52 (3); RC-53 (4); RC-56 (2); RC-59 (1); RC-80 (1); RC-83 (1); RC-90 (1); RC-91 (3); RC-92 (8); RC-93 (4); RC-94 (14); RC-95 (5); RC-96 (3); RC-97 (1); RC-98 (6); RC-

99 (4); RC-100 (11); RC-111 (5); RC-112 (5); RC-113 (4); RC-114 (2); RC-115 (3); RC-116 (4); RC-117 (10); RC-118 (3); RC-119 (4); RC-120 (1); F-4 (1); F-25 (1); F-30 (1); F-35 (1); F-44 (3); F-45 (9); F-274 (1 paratype, USNM 144859); F-283 (1 paratype, USNM 144860); DEJ-3 (1 paratype, ZMUC); DEJ-4 (holotype + 19 paratypes, ZMUC; 15 paratypes, USNM 144861); DEJ-7 (13 paratypes of which 2 used for SEM, ZMUC); DEJ-14 (5 paratypes, ZMUC); DEJ-16 (2 paratypes, ZMUC); DEJ-17 (2 paratypes, ZMUC).

Description.—Holotype complete, 2.4 mm long, 0.5 mm wide without setae, with 31 setigers. Other complete specimens up to 4.2 mm long, up to 0.6 mm wide without setae, with up to 39 setigers.

Prostomium circular with straight dorso-posterior margin, about a third broader than long (Fig. 4A); 5 antennae present, all basally swollen and distally drawn out into long thin tips; frontal antennae widely spaced, with dorsal ones almost as long as prostomium, ventral ones slightly shorter (Fig. 4B); median antenna longest, inserted anteriorly between eyes. Eyes very large, red, darker along anterior and medial edges, with lenses (Fig. 4A).

Proboscis not everted on holotype, observed on several paratypes; distal $\frac{3}{4}$ of length with well spaced, irregularly distributed, obvious micropapillae (4–5 μm in diameter); proximal $\frac{1}{4}$ with larger (8–10 μm in diameter) and more densely placed micropapillae (Fig. 4C); oral papillae not observed.

Tentacular formula 1 + S 1/1 + S 1/N; segment 1 dorsally and to some extent ventrally reduced, clearly delineated from segment 2; segment 2 slightly reduced dorsally. All tentacular cirri fusiform, basally swollen and distally drawn out, except ventral tentacular cirri of segment 2 (tip only weakly drawn out); those of segment 1 and ventral cirri of segment 2 reaching to segment 5, dorsal cirri of segment 2 longest, reaching to segment 8, as do dorsal cirri of segment 3.

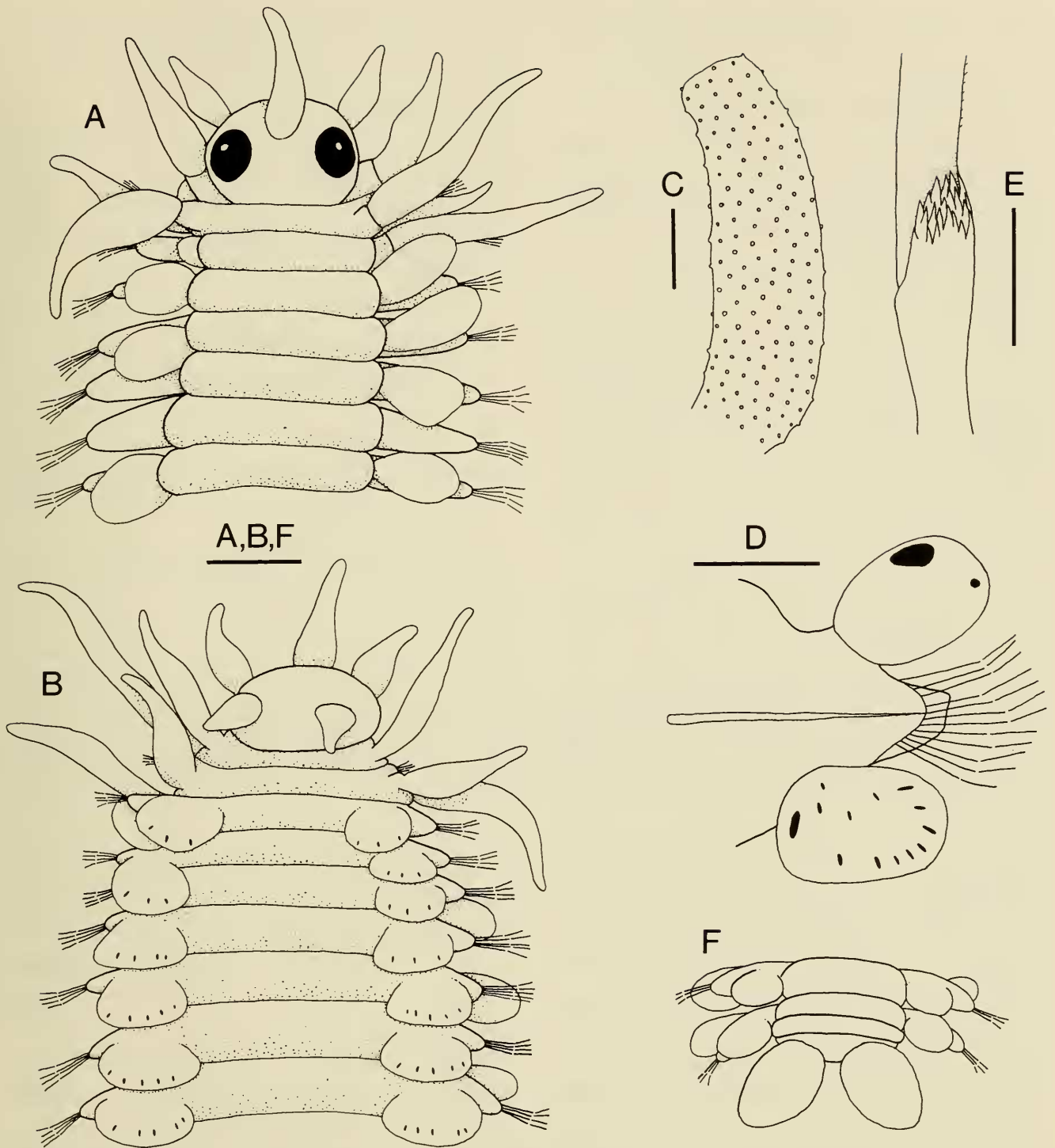


Fig. 4. *Eumida muriatica*, new species. A. Anterior end, dorsal view. B. Anterior end, ventral view. C. Everted proboscis, lateral view. D. Parapodium of setiger 17 (from animal with 39 setigers), posterior view. E. Seta at region of articulation. F. Posterior end with pygidium and anal cirri, ventral view. A–B, E–F: holotype, ZMUC. C–D: paratype, DEJ-4, ZMUC. Scales: A–B, F = 0.1 mm; C = 0.1 mm; D = 0.1 mm; E = 5 μ m.

All dorsal cirri similar; thickened oval to rectangular, slightly asymmetrical, distally blunt, almost 1½ times as long as broad (Fig. 4D). Supra-acicular lip of neuropodial pre-setal lobe slightly longer than sub-acicular lip. Rostrum of setal shaft with well devel-

oped heel and apical crown of 15–20 teeth (Fig. 4E; see also Eibye-Jacobsen 1991: fig. 2b, SEM photograph); distal article of seta rather short. All ventral cirri similar; slightly larger than dorsal cirri, thickened oval, distally blunt, about 1½ times as long as

broad, not projecting beyond neuropodial tips (Fig. 4D). Anal cirri thickened oval, distally blunt, 1½ to 2 times as long as broad (Fig. 4F). Pygidial papilla absent.

Living animals with yellowish green tinge; each segment with small green spots in broad diffusely defined transverse band dorsally (becomes dark brown in alcohol). Dorsal cirri pale yellow; on most specimens each with dark brown spot at dorsal edge (Fig. 4D). Ventral cirri darker, with 10 to 15 relatively large orange-red spots (glands?) predominantly along ventral edge (Fig. 4B, D). Dark reddish brown blotches of pigment often irregularly distributed on prostomium.

No ovigerous females recognized: 2 paratypes (3.5 mm long with 35 setigers, from st. DEJ-4) appear to contain sperm.

Remarks.—This species is referred to *Eumida*, although the cirral morphology and large eyes are not typical of the genus. However, similar structures may be found in *E. subulifera* (Ehlers, 1897) and, as regards the cirri, *E. minuta* (Ditlevsen, 1917). These species have important characters in common with both *Eumida* and *Clavadoce* Hartman, 1936 and a final decision on where they should be placed is deferred until our knowledge of the latter is more complete.

Eumida muriatica, n. sp. most closely resembles *E. subulifera* (Ehlers, 1897), both species having, in addition to the points mentioned above, a row of orange-red glandlike spots along the ventral edge of the ventral cirri (Fig. 4D). The species described here differs from *E. subulifera* in its lack of a pygidial papilla and proboscideal macropapillae (30–40 µm in diameter in the latter), in the presence of a large spot of pigment on the dorsal cirri, in having ventral cirri which are slightly larger than the dorsal cirri, and in the more or less horizontal (rather than obliquely upward) attachment of the ventral cirrus to the neuropodium.

Etymology.—This species is named for its yellowish green color (*muriaticus* is Latin for pickled).

Distribution.—Found in coral rubble (*Porites*,

Acropora palmata, and *A. cervicornis*) and among bunches of *Halimeda*, *Padina*, and *Dictyota dichotoma* at depths of 0–18 m. Known only from Belize: around Carrie Bow Cay in all directions, at South Water Cay, at the Cocoas, and at the Sand Bores. Type locality: in lagoon, about 50m north of Carrie Bow Cay, Belize, 0.5 m, in rubble of *Porites*.

Genus *Sige* Malmgren, 1865

Sige belizensis, new species

Fig. 5

Sige sp. 2 Eibye-Jacobsen, 1991:532, fig. 2c–d.

Material examined.—AC-520 (1); K-37 (3); K-49 (1); K-55 (3); K-60T (1); K-66 (1); K-70b (1); K-77 (3); K-101 (1); RC-1 (1); RC-12 (1); RC-17 (3); RC-26 (2); RC-31 (1); RC-35 (1); RC-36 (1); RC-37 (3); RC-39 (1); RC-40 (1); RC-45 (1); RC-50 (1); RC-53 (1); RC-56 (2); RC-94 (1); RC-95 (1); RC-96 (3); RC-97 (1); RC-98 (12); RC-99 (1); RC-100 (9); RC-105 (2); RC-107 (2); RC-108 (2); RC-111 (15); RC-112 (2); RC-113 (9); RC-114 (8); RC-115 (7); RC-116 (8); RC-117 (7); RC-118 (1); RC-119 (3); RC-120 (5); F-1 (1); F-27 (2); F-35 (1); F-42 (1); F-45 (2); F-147 (1); F-263 (2 paratypes, USNM 144862); F-266 (1 paratype, USNM 144863); F-275 (3 paratypes, USNM 144864); F-278 (1 paratype, USNM 144865); F-281 (3 paratypes, USNM 144866); F-285 (3 paratypes, USNM 144867); DEJ-3 (1 paratype, ZMUC); DEJ-4 (18 paratypes, ZMUC; 15 paratypes, USNM 144868); DEJ-6 (1 paratype, ZMUC); DEJ-7 (21 paratypes, ZMUC); DEJ-12 (2 paratypes, ZMUC); DEJ-13 (1 paratype, ZMUC); DEJ-14 (holotype + 5 paratypes of which 1 used for SEM, ZMUC; 5 paratypes, USNM 144869); DEJ-17 (4 paratypes, ZMUC); DEJ-18 (3 paratypes, ZMUC).

Description.—Holotype complete except for anal cirri, 2.7 mm long, 0.6 mm wide

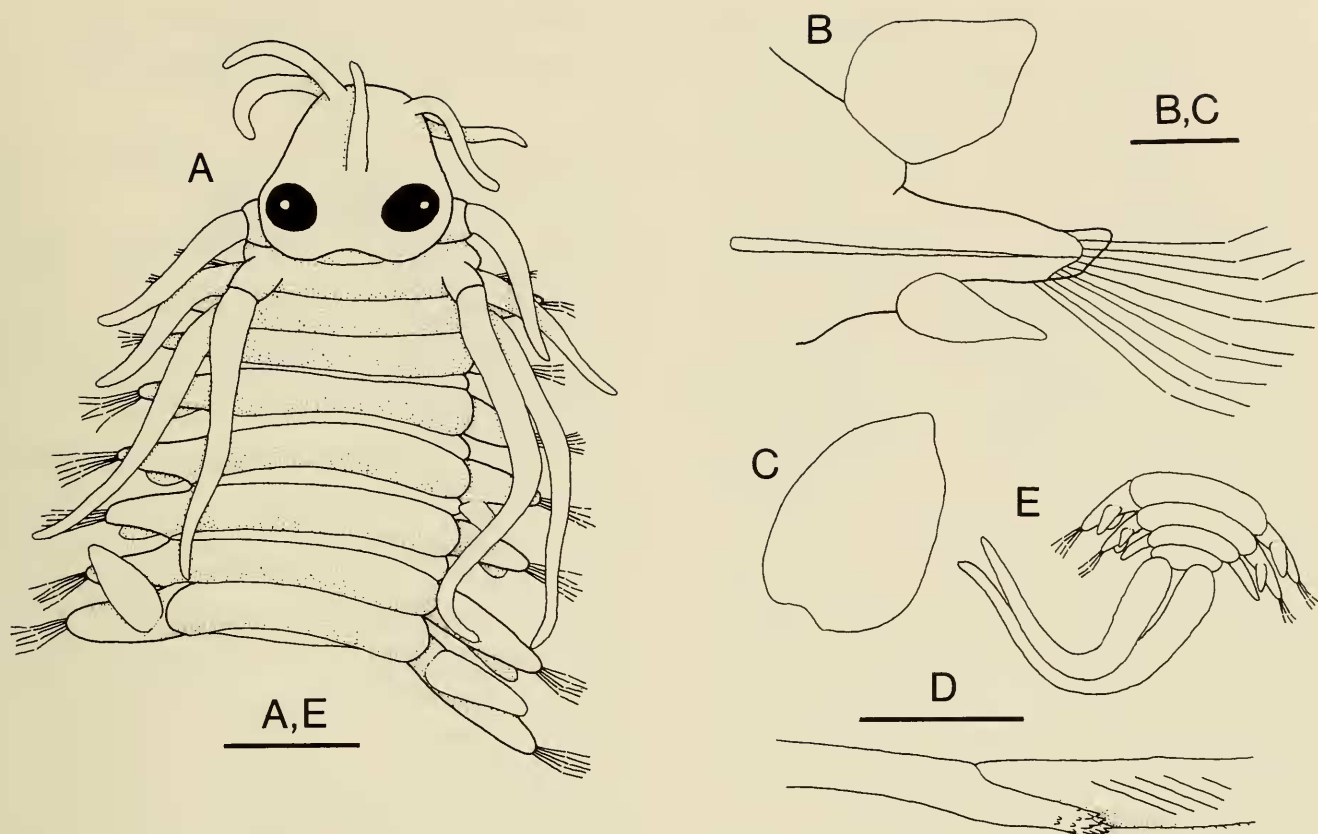


Fig. 5. *Sige belizensis*, new species. A. Anterior end, dorsal view. B. Parapodium of setiger 18, posterior view. C. Dorsal cirrus of setiger 9 (from animal with 52 setigers). D. Seta at region of articulation. E. Posterior end of body with anal cirri, ventral view. A–B: holotype, ZMUC. C: paratype, DEJ-17, ZMUC. D–E: paratypes, DEJ-14, ZMUC. Scales: A, E = 0.1 mm; B–C = 50 μ m; D = 5 μ m. D redrawn from SEM photograph.

without setae, with 36 setigers. Other, complete specimens up to 10.0 mm long (DEJ-4), up to 1.0 mm wide without setae (mature females, e.g., DEJ-17), with up to 52 setigers.

Prostomium cordiform to pentagonal, distinctly concave posteriorly, slightly broader than long (Fig. 5A). Five subulate antennae present, slightly shorter than prostomium; median antenna may be shorter and narrower, inserted between or just anterior to eyes. Eyes large, red in life, dark red or reddish brown on preserved animals, with lenses (Fig. 5A). Nuchal organs well-developed, situated on edge of prostomium behind eyes (studied in SEM).

Proboscis smooth with few widely spread micropapillae; 17 oral papillae, each with micropapillae (paratype from DEJ-14).

Tentacular formula 1 + S 1/1 + S 1/N; segment 1 partially reduced dorsally, visible

in posterior concavity of prostomium, clearly separate from segment 2 (Fig. 5A). All tentacular cirri cirriform, with those of segment 1 reaching to segment 5, those of segment 2 reaching to segment 6, and dorsal cirri of segments 2 and 3 reaching to segment 9 or 10 (holotype, tentacular cirri proportionately longer on larger specimens).

Dorsal cirri on middle segments asymmetrically cordiform, about $1\frac{1}{3}$ times as long as broad (Fig. 5B); cirri of posterior segments similar, but more elongate, cirri of anterior segments almost oval (Fig. 5C). Supra-acicular lip of neuropodial presetal lobe prolonged and much larger than sub-acicular lip (Fig. 5B). Rostrum of setal shaft weakly inflated, with well-developed heel and very few, distally placed, teeth (Fig. 5D); distal article of seta long. Ventral cirri on anterior and middle segments lanceolate, about twice as long as broad, shorter than

neuropodium (Fig. 5B); slightly more elongate on posterior segments. Anal cirri observed on several paratypes as cirriform, about 10 times as long as broad (Fig. 5E); pygidial papilla absent.

Living animals pale yellow with light orange-brown dorsal and ventral cirri; tentacular cirri and prostomium anterior to eyes can have same color; dorsal cirri on many specimens with dark orange-brown pigment (glands?) along dorsal and ventral edges, not reaching tip; ventral cirri can also have this pigment. Preserved animals colorless apart from dorsal and ventral cirri.

Type material includes many mature specimens. Males and females as small as 3.0 mm, with about 35 setigers, may contain sexual products. Eggs yellowish green (light reddish brown in alcohol), up to 100 μm in diameter, with a visible germinal vesicle from a diameter of about 70 μm .

Remarks.—According to Pleijel (1990), the genus *Sige* contains ten species, only four of which possess eyes. *Sige belizensis* most closely resembles *S. parvicirrus* (Perkins, 1984), especially in the shape of the dorsal cirri. Study of the type material (USNM 80510) shows, however, that it differs from *S. belizensis* in having a much broader prostomium, relatively shorter antennae and tentacular cirri, smaller eyes, and darker pigmentation. Furthermore the large, brown “brain lobes,” which are characteristic of *S. parvicirrus*, are absent in *S. belizensis*.

Etymology.—This species is named after the beautiful country from which it is described.

Distribution.—Found in coral rubble (*Porites*, *Acropora palmata*, and *A. cervicornis*) and among bunches of *Amphiro*, *Dictyota*, *Caulerpa racemosa*, and *Halimeda*, at depths of 0–28 m. Known only from Belize (around Carrie Bow Cay, South Water Cay, Tobacco Cay, and the Sand Bores). Type locality: in lagoon, 50 m south of Carrie Bow Cay, Belize, 0.3 m, in rubble of *Porites*.

Genus *Pterocirrus* Claparède, 1868
Pterocirrus foliosus (Treadwell, 1924)
Fig. 6

Eulalia foliosa Treadwell, 1924:10, pl. 2, figs. 16–18.

Pterocirrus foliosus.—Eibye-Jacobsen 1991: 532, fig. 2e.

Sige orientalis?—Fauchald 1977:16. [Not *Sige macroceros orientalis* Imajima & Hartman, 1964.]

Material examined.—R-23.4.74 (3); JDF-15-3 (1); GH-16 (1); GH-26 (1); GH-36 (4); K-35 (4); K-36 (3); K-55 (4); K-60T (4); K-98 (2); RC-7 (2); RC-10 (1); RC-18 (2); RC-28 (1); RC-30 (1); RC-33 (2); RC-52 (1); RC-61 (2); RC-62 (1); RC-63 (1); RC-76 (1); RC-81 (1); RC-83 (fragment); RC-85 (1); RC-86 (1); RC-87 (1); RC-90 (2); RC-101 (1); F-4 (4); F-21 (1); F-30 (1); F-44 (1); F-45 (6); F-116 (3); F-135 (1); F-261 (2); F-263 (3); F-266 (15); F-270 (9); F-282 (1); DEJ-3 (1); DEJ-4 (4, 1 used for SEM); DEJ-6 (7); DEJ-7 (2); DEJ-10 (1); DEJ-12 (8, 1 used for SEM); DEJ-13 (7); DEJ-14 (7); DEJ-18 (3); DEJ-21 (2).

Description.—Length up to 24 mm (DEJ-21, posteriorly incomplete), most specimens 5–10 mm long. Width without setae up to 3.0 mm, on 10.7 mm long specimen 1.2 mm (F-270). Up to 90 setigers (DEJ-21), 10.7 mm long specimen with 78 setigers.

Prostomium rounded, broader than long, with wedge-shaped or rectangular dorso-posterior depression (Fig. 6A); 5 subulate antennae present, each almost as long as prostomium; median antenna may be slightly thinner, inserted anteriorly just in front of eyes. Eyes very large, circular or oval, dark red in life (even darker in preserved specimens), with lenses. Nuchal organs small, situated on posterior edge of prostomium.

Proboscis densely covered with diffusely distributed, elongate conical papillae; each about 40 μm long and 15 μm wide, with an

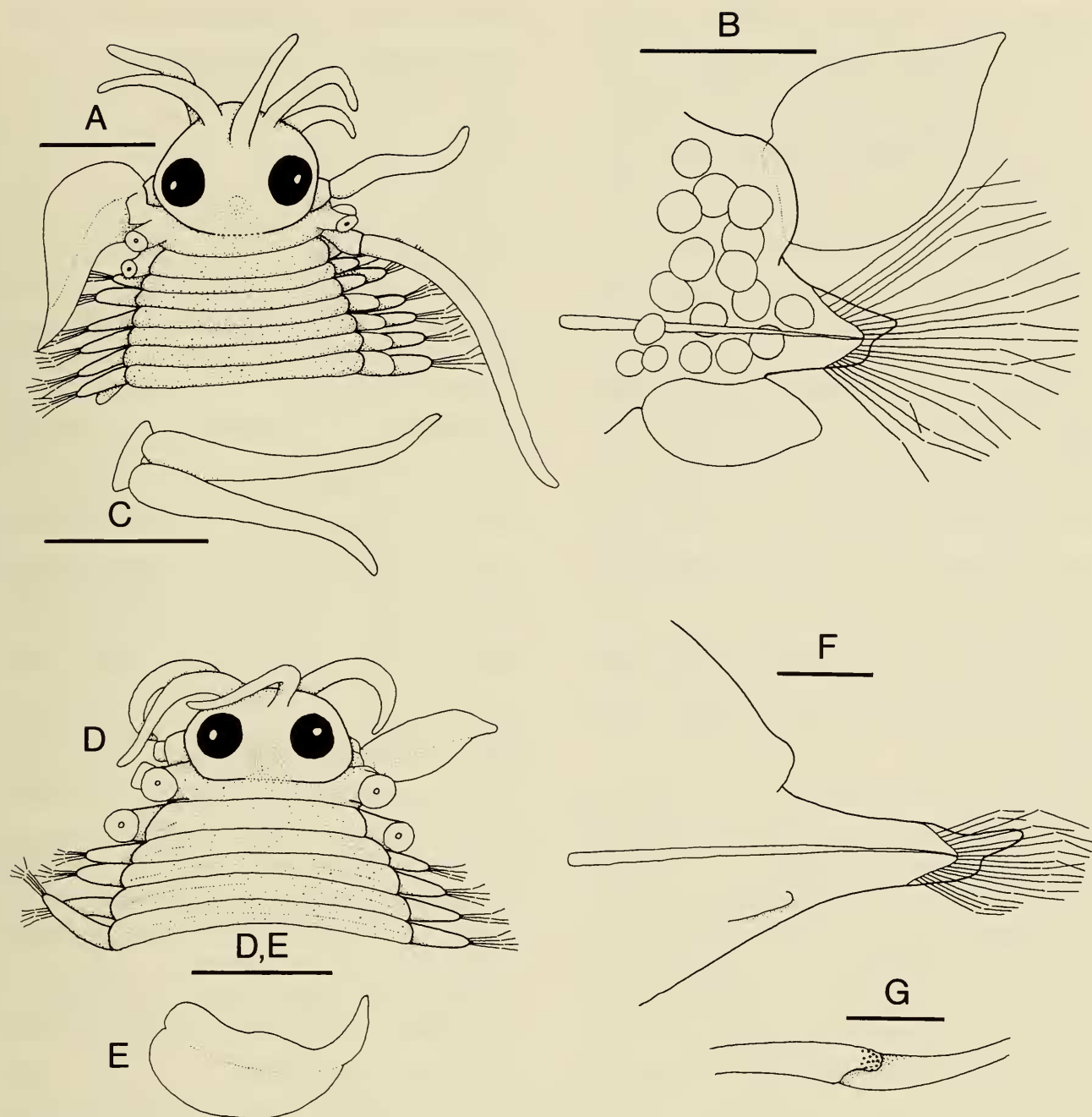


Fig. 6. *Pterocirrus foliosus* (Treadwell, 1924). A. Anterior end, dorsal view. B. Parapodium of setiger 43 (from animal with 80 setigers), posterior view. C. Pygidium with anal cirri, dorsal view. D. Anterior end, dorsal view. E. Ventral tentacular cirrus of segment 2, dorsolateral view. F. Parapodium of setiger 48, posterior view, dorsal and ventral cirri lost. G. Seta at region of articulation. A–B: F-270, USNM. C: F-261, USNM. D–G: holotype, USNM 20328. Scales: A = 0.25 mm; B = 0.25 mm; C = 0.25 mm; D–E = 0.5 mm; F = 0.25 mm; G = 25 μ m.

apical ring of 6 (?) pores (diameter of each about 0.4 μ m, observed in SEM).

Tentacular formula 1 + 0 1/1 + 0 1/N; neuropodium of segment 3 diminutive, setae present from segment 4; segment 1 dorsally reduced (but see remarks below), segments 1 and 2 ventrally fused, with

longitudinal furrows. Tentacular cirri cirriform, except ventral ones of segment 2 which each bear a large ventral lamella (Fig. 6A); tentacular cirri of segment 1 reaching to segment 7, ventral cirri of segment 2 reaching to segment 8, dorsal cirri of segments 2 and 3 reaching to segment 12.

Dorsal cirri of middle segments elongate, cordiform, with drawn-out acuminate tip, asymmetrical with ventral margin longest, about 1½ times as long as broad (Fig. 6B); cirri of anterior segments less elongate, and cirri of posterior segments lanceolate, about twice as long as broad. Supra-acicular lip of neuropodial presetal lobe drawn out to a sharp tip, especially long on larger specimens. Rostrum of setal shaft with small, apically concentrated teeth, otherwise smooth, with well-developed heel (Fig. 6G; verified also on animals from Belize using SEM); upper setae in fascicle with narrower rostrum and fewer teeth, lower setae with more truncate rostrum. Distal article of seta long. All ventral cirri similar, elongate oval with blunt tip, considerably shorter than neuropodium (Fig. 6B), on larger specimens tip more acuminate, pointing slightly downwards. Anal cirri cirriform, about 6 times as long as broad (Fig. 6C); pygidial papilla absent.

Living animals pale brown or greenish with broad brown dorsal longitudinal band; brown pigment also present on dorsoposterior depression of prostomium and often on antennae and pygidium; dorsal and ventral cirri with reddish brown pigment; pigment often also present on venter as weak, transverse, segmental bands. Brown color of dorsum becoming darker on preserved animals, nearly black on large ones. On most specimens single thin light ciliary band evident across dorsum of most segments.

Material includes mature specimens; smallest complete recognizable male 4.8 mm long, smallest complete female containing eggs 7.4 mm long (F-270). Eggs dark olive-green (dark brown or reddish brown in alcohol), up to 70 µm in diameter (not quite mature, DEJ-14).

Remarks.—*Eulalia foliosa* was originally described from a single specimen from Barbados (Treadwell 1924) and has not been reported since. Examination of the holotype (USNM 20328) revealed that the species belongs to *Pterocirrus* (Fig. 6D–G) and that

the animals taken in Belize are conspecific. The holotype is 25.3 mm long, about 3 mm wide without setae, and has 116 setigers (complete apart from anal cirri). The neuropodia have shriveled somewhat and are now brittle (Fig. 6D), and most appendages have been lost, only one tentacular cirrus (Fig. 6E), one dorsal cirrus, and a few ventral cirri remaining. In all points where a comparison was possible, the holotype agreed with the description given above. The pigmentation pattern was identical, although darker on the holotype, possibly the result of prolonged preservation in alcohol.

Pterocirrus foliosus closely resembles *P. macroceros* (Grube, 1860), described from the Adriatic Sea, but differs in having darker pigmentation, much less elongate proboscideal papillae, less elongate dorsal cirri, and more rounded ventral cirri. The latter species has been reported from North Carolina (Gardiner 1975:109, fig. 6k, l) and the Gulf of Mexico (Gathof 1984:19-16, fig. 19-12).

Imajima & Hartman (1964:70) erected the variety *orientalis* of *Pterocirrus macroceros* (as *Sige macroceros*) for animals from Japan having setae beginning on segment 3. According to Imajima & Hartman, European animals have setae beginning on segment 2, whereas they actually begin on segment 4 (pers. obs.) as in *P. foliosus*. This confusion stems from Bergström (1914:98), who synonymized *Sige fusigera* Malmgren, 1865 with *P. macroceros* under the name of *Sige macroceros* (see Eibye-Jacobsen 1987, Pleijel 1990). Fauchald (1977:16) reported (with doubt) a single specimen of Imajima & Hartman's variety (as *Sige orientalis*) from the Atlantic side of Panama. Examination of this animal (USNM 61642), as well as six others from the same investigation (USNM 66009), showed that they are *P. foliosus*.

It is uncertain whether species of *Pterocirrus*, such as *P. foliosus* and *P. macroceros*, should be regarded as having segment 1 completely or only partially reduced dorsally. Stereoscopic viewing of SEM photo-

graphs of the dorsoposterior prostomial depression did not allow an opinion to be formed as to whether this depression is part of the prostomium itself or a dorsal vestige of segment 1.

There appears to be a greater tendency for pigment to leach from the eyes of preserved specimens of *P. foliosus* than in the other species reported in this paper, although most were treated identically. On such animals the eyes may be overlooked, making identification difficult.

Small individuals of *P. foliosus* may be confused with *Sige belizensis*, especially if the ventral tentacular cirri of segment 2 have been lost. However, the position of the median antenna, prostomial shape, and neuropodial morphology permit distinction of the two. During quick identification the most obvious difference is that of pigmentation, *P. foliosus* being a much darker species.

Distribution.—Found in Belize in coral rubble (*Acropora palmata*, *Porites*, and *Agaricia agaricites*), in coral sand, and in bunches of *Halimeda* and *Caulerpa*, at depths of 0–18 m. Needham's Point, Barbados (Treadwell 1924:10, type locality). Galeta Reef, Panama (Fauchald 1977:16).

Genus *Nereiphylla* Blainville, 1828

Nereiphylla mimica, new species

Fig. 7

Material examined.—GH-17.1.76-1 (1); GH-26 (2); GH-32 (2); GH-36 (4); K-35 (1); K-46(1); K-58 (1); K-77 (1); K-107 (1); RC-1 (12); RC-3 (5); RC-8 (4); RC-10 (3); RC-12 (2); RC-18 (1); RC-21 (3); RC-26 (1); RC-34 (3); RC-39 (1); RC-41 (1); RC-52 (1); RC-53 (1); RC-59 (2); RC-60 (1); RC-82 (3); RC-91 (3); RC-92 (2); RC-93 (4); RC-94 (6); RC-96 (2); RC-97 (1); RC-98 (3); RC-100 (4); RC-101 (3); RC-102 (1); RC-103 (1); RC-107 (1); RC-111 (1); RC-112 (1); RC-116 (3); RC-117 (3); RC-118 (7); RC-119 (4); RC-120 (3); F-1 (1); F-45 (2); F-283 (4 paratypes, USNM 144870); DEJ-4 (1 paratype, ZMUC); DEJ-7 (1 paratype, ZMUC); DEJ-9 (1 paratype, ZMUC); DEJ-11 (1

paratype, ZMUC); DEJ-12 (1 paratype, ZMUC); DEJ-14 (1 paratype, ZMUC); DEJ-16 (1 paratype, ZMUC); DEJ-18 (1 paratype, ZMUC); DEJ-21 (holotype + 1 paratype, ZMUC; 3 paratypes, USNM 144871).

Description.—Length up to 4.3 mm (F-283), holotype 2.8 mm long (complete except for anal cirri). Width without setae up to 0.55 mm, holotype 0.45 mm wide. Up to 35 setigers (F-283), 34 on holotype.

Prostomium oval to pentagonal, with straight dorsoposterior margin, broader than long (Fig. 7A); 4 fusiform antennae present, each about as long as prostomium, with dorsal pair inserted just below frontal edge; eyes large, dark red, with lighter red lenses; nuchal papilla absent; nuchal organs not observed.

Proboscis not everted on holotype, observed on 1 specimen only (RC-1); covered with diffusely distributed small rounded papillae; oral papillae not observed.

Tentacular formula 1 + S 1/1 + S 1/N, segment 2 with only 1 or 2 setae on each side. Segment 1 dorsally reduced, ventrally weakly separated from segment 2. Ventral tentacular cirri of segment 2 cirriform, not flattened, reaching to segment 4. Other tentacular cirri of uniform width along most of length, abruptly tapering distally; those of segment 1 reaching to segment 4, dorsal ones of segments 2 and 3 reaching to segment 5 or 6.

All dorsal cirri thick and oval, slightly longer than broad (Fig. 7B). Neuropodial presetal lobe not obviously divided into supra- and sub-acicular lips. Rostrum of setal shaft inflated with distal crown of about 12 teeth (Fig. 7C); distal article of seta short, distally very narrow. All ventral cirri oval, longer than broad, obliquely attached to and as long as or slightly shorter than neuropodium (Fig. 7B). Anal cirri of paratypes oval, distally tapering, about 1½ times as long as broad (Fig. 7D); anal cirri lost on holotype; pygidial papilla absent.

Living animals pale brown with dark brown or rusty brown pigment on antennae,

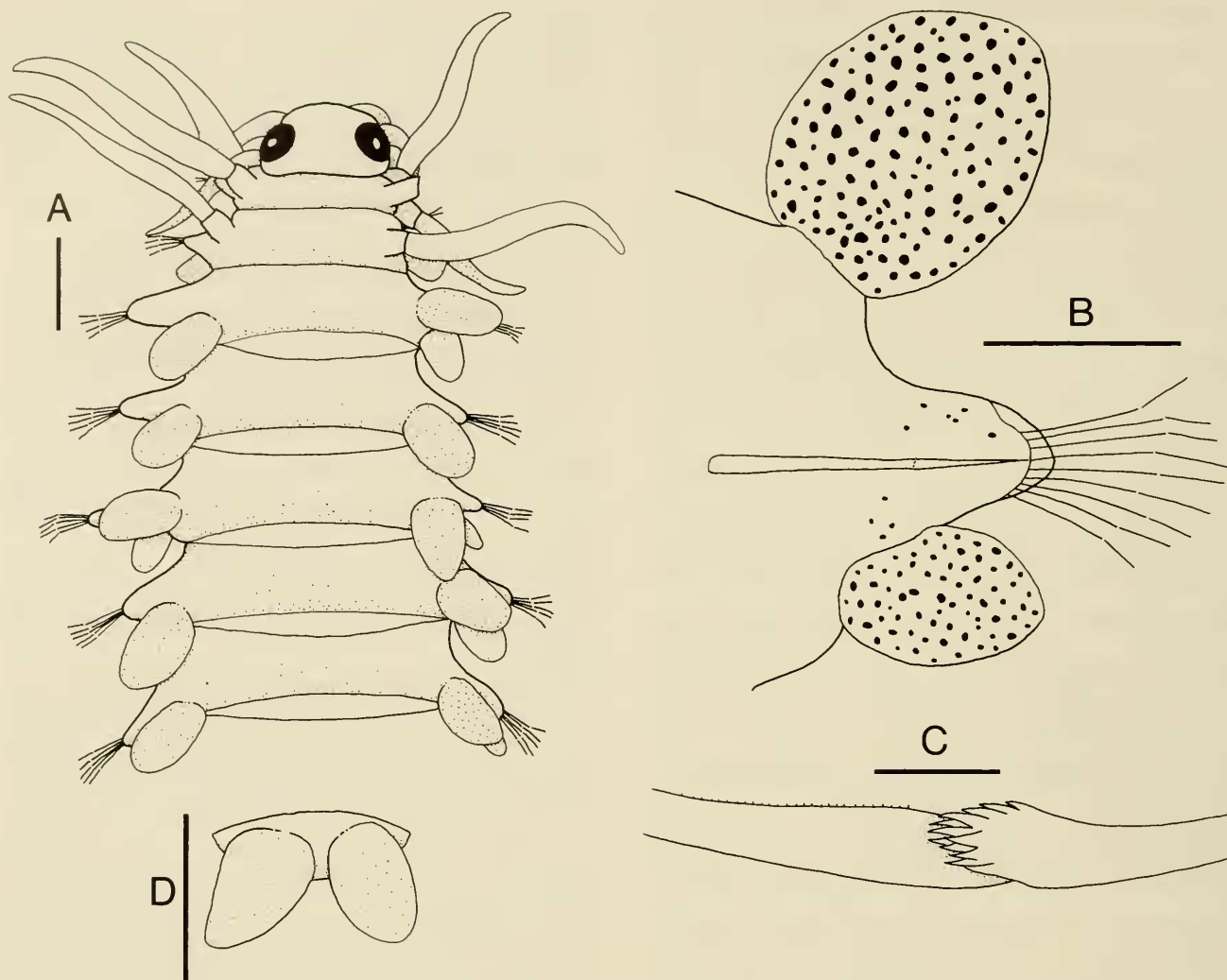


Fig. 7. *Nereiphylla mimica*, new species. A. Anterior end, dorsal view. B. Parapodium of setiger 14, posterior view. C. Seta at region of articulation, from parapodium in B. D. Pygidium with anal cirri, ventral view. A–C: holotype, ZMUC. D: paratype, DEJ-21, ZMUC. Scales: A = 0.1 mm; B = 0.1 mm; C = 10 μ m; D = 0.1 mm.

cirri (tentacular, dorsal, ventral, and anal), and anterior prostomium. Pigment reddish brown or dark orange in alcohol, dorsum and venter usually with broad weak transverse band of reddish-brown pigment on each segment; ventral cirri (and occasionally also dorsal ones) may have a few, diffusely distributed red spots in addition to orange or reddish brown color.

No ovigerous females recognized. Material includes 1 male containing sperm (RC-1), 3.3 mm long, with 30 setigers, complete.

Remarks.—Much confusion exists regarding which species of *Nereiphylla* are present in Caribbean and neighboring waters. *Nereiphylla fragilis* (Webster, 1879) and *N. castanea* (Marenzeller, 1879) have both been reported from North Carolina (Gar-

diner 1975) and the Gulf of Mexico (Hartman 1951, Gathof 1984). A comparison of *N. mimica* with the type material of *N. fragilis* (USNM 535; type locality: Northampton County, Virginia) and *N. castanea* (Naturhistorisches Museum, Vienna 523; type locality: Enosima, Japan) showed that the Belizean animals belong to a distinct species. In addition to their pigmentation, both differ from *N. mimica* in being much bigger and having cordiform dorsal cirri larger relative to the neuropodia and attached to strongly developed cirrophores. Furthermore, *N. castanea* differs from *N. fragilis* and *N. mimica* in having the dorsal tentacular cirri of segments two and three very obviously flattened.

Treadwell (1901) described *Phyllodoce*

magnaoculata from Puerto Rico on the basis of a single specimen. Study of the holotype (USNM 15951), although in very poor condition, revealed that the species belongs to *Nereiphylla*. It differs from *N. mimica* in having reniform dorsal cirri with strongly development cirrophores and is apparently also distinct from *N. fragilis* and *N. castanea*. More material is necessary before this species can be adequately characterized.

Gathof (1984) described some specimens from the Gulf of Mexico as *Genetyllis* sp. A. An examination of some of this material (1 specimen each from USNM 89979, 89980, and 112306) demonstrated that they belong to a species of *Nereiphylla* separate from all those mentioned above. They differ from *N. mimica* in having a triangular to cordiform prostomium, smaller eyes, subulate tentacular cirri, and triangular to oval dorsal cirri. Their pattern of pigmentation is reminiscent of that in *N. mimica*, although it is darker and red spots are lacking on the podial cirri of all specimens.

It is quite easy to confuse living animals of *N. mimica* with *Eumida muriatica*, especially in cases where the median antenna of the latter has been lost. This is due to their almost identical sizes and body proportions, generally pale bodies with darker markings on the dorsal and ventral cirri, and relatively large eyes. Furthermore, as mentioned above, some specimens of *Nereiphylla mimica* also have red spots on the ventral cirri. However, in *E. muriatica* these spots are relatively large and arranged in a line along the ventral border of the cirrus, whereas they are smaller and diffusely distributed on the entire surface in *N. mimica*. The dorsum is pale brown or orange in the latter, yellowish green in the former. Another distinction, useful when working with live animals, is the very different morphologies of their tentacular cirri.

Etymology.—This species is named for its striking, albeit superficial, resemblance to *Eumida muriatica*, new species (mimicus

is Latin for imitative, deceptive, acting as, or having the traits of).

Distribution.—Found among epifauna and *Halimeda*, in coral rubble (*Porites*, *Acropora palmata*, and *A. cervicornis*), and among *Dictyota* on sand and *Caulerpa* in mangroves, at depths of 0–28 m. Known only from Belize (around Carrie Bow Cay, South Water Cay, Tobacco Cay, the Cocoas, and the Sand Bores). Type locality: among epifauna and *Halimeda* on pier, 25 m west of Carrie Bow Cay, Belize, 1 m.

Notes on Other Species

This section is included in order to provide a point of reference for future studies on the phyllodocid fauna of Belize. At present, little more may be said than that these species are present and distinct from those treated above. In addition to the following material, 39 phyllodocid specimens from a total of 33 stations were indeterminable, being either juveniles or in very poor condition.

Phyllodoce sp. A.—A single specimen from st. JDF-20-1 is unusual in having dorsal cirri on middle segments which are very broad, almost reniform. The animal is large, about 95 mm long, and in good condition, but the proboscis is not everted.

Phyllodoce sp. B.—Material examined: K-37(2); K-77 (1); K-102 (2); F-36 (1); F-221 (2). These animals differ from *P. erythrophylla* in having papillae diffusely distributed on the proximal part of the proboscis. They were compared to the type material of *P. panamensis* Treadwell, 1917 (USNM 16831; type locality: Chame Point, Panama, Pacific Ocean) and *P. nicoyensis* Treadwell, 1928 (USNM 19244 + 2 paratypes in USNM 19245; type locality: Gulf of Nicoya, Costa Rica, Pacific Ocean). *P. panamensis* may easily be distinguished by the extreme development of the cirrophores of its dorsal cirri and by having proboscideal papillae in twelve rows with up to 20 papillae in each. *P. nicoyensis* has diffusely

distributed papillae on the proboscis, but is unlike Belizean animals in having almost oval dorsal cirri and very pointed ventral cirri. The eight specimens reported here may in fact belong to two species.

Phyllodoce sp. C.—A single specimen from st. K-37 is remarkable in lacking true eyes, although a few spots of pigment may be seen on the prostomium. The proboscis is everted and shows 12 basal rows of up to 8 papillae.

?*Protomystides* sp.—A single specimen of this species was taken at st. DEJ-1. It is complete with about 80 segments, 3.5 mm long, and 0.30 mm wide excluding setae. The prostomium is elongate conical, appears to bear only 4 antennae and has 2 small red eyes. The tentacular formula is $1 + 0? 1/1 + S 1/N$, but the ventral tentacular cirri of segment 2 are very short. All segments are fully developed. Dorsal and ventral cirri are oval, the anal cirri have been lost, and the pygidium bears a very long pygidial papilla (about 40 μ m long). The animal was golden yellow in life, now yellowish with reddish brown pigment specks on the dorsum as well as the dorsal and ventral cirri.

Eulalia sp.—Only 1 specimen, taken at st. K-102. It is about 10 mm long and brown with dark brown podial cirri. The animal is in poor condition, but appears to belong to the group of species that resemble *E. bilineata* (Johnston, 1865).

Pterocirrus cf. *macroceros* (Grube, 1860).—Material examined: JDF-63-1 (1); RC-70 (1). These animals differ from *P. foliosus* (treated above) in having dorsal cirri which are extremely elongate, up to about 3 times as long as broad. The eyes are very large, with prominent lenses. The dorsum is dark brown, especially on anterior segments, whereas the dorsal cirri are lighter.

Nereiphylla cf. *fragilis* (Webster, 1879).—Material examined: GH-18 (1); K-101 (1). These animals are 3 and 8 mm long respectively and differ from *N. mimica*, new species, in having more elongate and asym-

metrical dorsal cirri. It is further distinguished by its uniform dark brown color.

Nereiphylla sp.—A single specimen from st. JDF-13-7 differs from *N. mimica* and *N. cf. fragilis* in having very large dorsal cirri and ventral cirri which are almost vertically attached to the neuropodium. The animal is about 25 mm long and is orange-brown with darker cirri.

Together with the species treated in detail above and *Phyllodoce panamensis* Treadwell, 1917 (reported by Young & Young 1982), this brings the total number of phyllocid species known to be present in Belize to at least 17.

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Appendix: Station Data

In the following, CBC refers to Carrie Bow Cay.

1. Collected by Klaus Ruetzler (material in USNM):

R-23.4.74: 16°48'N, 88°05'W, 0 m, 23 Apr 1974.

R-2.5.74-2: as preceding, rock sample, 1 m, 2 May 1974.

R-4.5.74-3: as preceding, 0.5 m, 4 May 1974.

2. Collected by Joan D. Ferraris at CBC (material in USNM):

JDF-13-7: patch reef, SW of CBC, 2–3 m, 24 Apr 1975.

JDF-15-3: N end of back reef, rubble, 1.5 m, 25 Apr 1975.

JDF-20-1: back reef, *Porites asteroides*, 28 Apr 1975.

JDF-23-2: lagoon, 185 m W of dock, 2–3 m, 29 Apr 1975.

JDF-47-2: transect 520 m, far reef slope, *Agaricia agaricites* slab, 17 m, 14 May 1975.

JDF-63-1: sand trough, rubble, 8 m, 22 May 1975.

3. Collected by Gordon Hendler (material in USNM):

GH-17.1.76-1: rock pile, 17 Jan 1976.

GH-3: 16°42.5'N, 87°51.8'W, Glovers Reef, inner SW Cays, 0–2 m, 23 Mar 1980.

GH-6: 16°45.5'N, 87°52.8'W, Glovers Reef, SW Cays, 0–3 m, 24 Mar 1980.

GH-11: 16°48.2'N, 88°04.5'W, forereef slope, 27.4 m, 26 Mar 1980.

GH-16: as preceding, forereef crest, 15.2 m, 27 Mar 1980.

GH-18: 16°48.9'N, 88°05.9'W, cut at S end of Twin Cays, mangrove, 1–2 m, 28 Mar 1980.

GH-22: 16°48.2'N, 88°04.5'W, 36 m, 29 Mar 1980.

GH-26: 16°48.2'N, 88°04.6'W, 3–6 m, 31 Mar 1980.

GH-32: 16°48.2'N, 88°04.5'W, 15 m, 2 Apr 1980.

GH-36: 16°48.1'N, 88°04.8'W, 0–2 m, 3 Apr 1980.

GH-38: 16°48.2'N, 88°04.6'W, 3–9 m, 4 Apr 1980.

4. Collected by Anne Cohen at CBC (material in USNM):

AC-509: spur and groove, sand and rubble, 8.4 m, 26 Oct 1979, coll: A. Cohen.

AC-520: transect, sand trough next to outer reef edge, 23 m, 31 Oct 1979, coll: A. Cohen & Rath.

5. Collected by Brian Kensley (at CBC unless otherwise noted; material in USNM):

K-33: rubble and pavement, mainly *Acropora* rubble, 1 m, 5 Apr 1979.

K-35: center slope of reef, rubble, few *Thalassia* clumps, 18 m, 5 Apr 1979.

K-36: as preceding, rubble with attached algae and sponges, 10–18 m.

K-37: sand trough on outer reef slope, coarse sediment and small rubble, 25 m, 6 Apr 1979.

K-43: *Porites* rubble in flats behind spur and groove area, 1 m, 8 Apr 1979.

K-46: Twin Cays?, *Caulerpa verticillata* carpet under dense mangrove shade, 0.1–0.2 m, 9 Apr 1979.

K-47: lagoon, in *Padina* clumps growing on coral rubble, 1 m, 10 Apr 1979.

K-49: spur and groove, rubble, 8–9 m, 10 Apr 1979.

K-53: *Dictyota dichotoma* clumps growing on rubble, coarse sandy sediment, 1 m, 12 Apr 1979.

K-55: reef crest E of CBC, clumps of *Caulerpa racemosa* with attached rubble, 0.1–0.3 m, 15 Apr 1979.

K-58: sand and rubble zone, back reef rubble, 4 m, 28 Oct 1979.

K-60T: rubble and pavement, *Halimeda* from back reef, 1–2 m, 29 Oct 1979.

K-62b: 2 km SW of CBC, rubble and coarse sediment from bare patches in algal mat, 5–8 m, 30 Oct 1979.

K-64: buttress base, upper spur and groove, coral rubble, 5–8 m, 1 Nov 1979.

K-66: lagoon E of CBC, *Amphiroa* clumps between *Thalassia*, 0.2 m, 3 Nov 1979.

K-70b: E of CBC, sand trough on reef, *Dictyota* on rubble, 28 m, 6 Nov 1979.

K-70c: as preceding, rubble lying in pockets.

K-74: outer reef ridge, pockets of rubble, 15 m, 12 Nov 1979.

K-77: sand trough, coarse rubble and sediment, scattered *Dictyota*, 28 m, 12 Mar 1980.

K-96: coarse sediment and coral fragments, scattered gorgonians, 6 m, 7 Apr 1981.

K-98: reef crest, rubble with encrusting corallines and algal turf, 0.1–0.2 m, 10 Apr 1981.

K-101: edge of sand trough near drop-off, rubble, 25 m, 14 Apr 1981.

K-102: outer edge of outer ridge, rubble, 22 m, 9 Jun 1981; coll: B. Kensley & P. Hutchings.

K-107: South Water Cay, intertidal rocky platform, coral rubble with orange-brown encrusting alga, 0.3 m, 13 Jun 1981.

6. Collected on the reef crest east of CBC as part of the Reef Crest Survey Project of USNM (all material collected by Brian Kensley and Kristian Fauchald; material in USNM):

RC-1 to RC-5: coral rubble with *Homotrema* and *Lithothamnion*, from between *Thalassia*, 0.2–0.3 m, 5 Nov 1979.

RC-6 to RC-10: as preceding, 6 Nov 1979.

RC-11 to RC-15: coral pavement and *Lithothamnion*, 0.3 m, 6 Nov 1979.

RC-16 to RC-20: coral rubble, 0.2–0.3 m, 8 Nov 1979.

RC-21 to RC-25: coral rubble, upper layer covered with algal turf, 0.1–0.2 m, 9 Nov 1979.

RC-26 to RC-30: on highest part of reef crest, coral pavement and algal turf, 10 Nov 1979.

RC-31 to RC-35: rubble between *Thalassia*, 4 Mar 1980.

- RC-36 to RC-40: as preceding, 5 Mar 1980.
 RC-41 to RC-45: rubble with algal carpet, 7 Mar 1980.
 RC-46 to RC-50: as preceding, 9 Mar 1980.
 RC-51 to RC-55: rubble without vegetation, 10 Mar 1980.
 RC-56 to RC-60: as preceding, 12 Mar 1980.
 RC-61 to RC-65: as preceding, 14 Aug 1980.
 RC-66 to RC-75: rubble with algal turf, 15 Aug 1980.
 RC-76 to RC-80: rubble without vegetation, 15 Aug 1980.
 RC-81 to RC-90: rubble between *Thalassia*, 16 Aug 1980.
 RC-91 to RC-95: as preceding, 3 Dec 1980.
 RC-96 to RC-100: as preceding, 4 Dec 1980.
 RC-101 to RC-105: rubble with algal turf, 6 Dec 1980.
 RC-106 to RC-110: as preceding, 7 Dec 1980.
 RC-111 to RC-115: rubble without vegetation, 9 Dec 1980.
 RC-116 to RC-120: as preceding, 10 Dec 1980.
7. Collected by Kristian Fauchald unless otherwise noted (material in USNM):
- F-1: S of CBC, inside edge of reef, old coral blocks, 0.3 m, 4 Apr 1979.
 F-4: SE of CBC, rubble field, *Acropora* rubble, 0.25 m, 8 Apr 1979.
 F-21: E of CBC, 3 m inside edge of turtlegrass, coral sand, 0.3 m, 28 Oct 1979.
 F-25: 10 m from inner end of transect at CBC, coral rubble and *Dictyota*, 1.2 m, 1 Nov 1979.
 F-27: 10 m N of CBC, *Thalassia* bed, coral rubble and sand, 0.4 m, 4 Nov 1979.
 F-30: 10 m E of CBC, shallow rubble field on reef flat, *Porites* rubble, 0.3 m, 5 Nov 1979.
 F-35: 90 m SW of CBC, *Thalassia* bed, coral rubble, 0.7 m, 8 Nov 1979.
 F-36: SW of CBC, *Thalassia* bed, sand, 0.6 m, 9 Nov 1979.
 F-39: 10 m NW of CBC, sand field near *Dictyota*, 0.6 m, 10 Nov 1979.
 F-41: 20–25 m SW of CBC, near edge of *Thalassia* bed, sand, 11 Nov 1979.
 F-42: 6 m NW of CBC, at base of *Dictyota* covered block, sand, 0.3 m, 12 Nov 1979.
 F-44: 10 m SW of CBC, coral rubble, 0.3 m, 12 Nov 1979.
 F-45: 25 m SW of CBC, coral rubble, 0.6 m, 12 Nov 1979.
 F-48: 20 m S of CBC, well-encrusted coral rubble, 0.7 m, 13 Nov 1979.
 F-65: 100–200 m N of CBC, sand, sparse *Thalassia*, rubble, 1 m, 15 Aug 1980.
 F-116: 15–20 m W of CBC, rubble field, *Thalassia*, fist-sized rubble, 0.4 m, 11 Dec 1980.
 F-135: SW of CBC, rubble field, rubble, 0.25 m, 9 Apr 1981.
- F-147: as preceding, old rubble, 0.1 m, 13 Jun 1981.
 F-221: channel NW of CBC, inside reef flat, *Thalassia* on sand, rubble, 36 m, 19 Nov 1983.
 F-261: about 30 m S of CBC, reef flat, rubble of branching *Acropora*, 0.6 m, 26 Oct 1988.
 F-263: N side of CBC, near old transect, *Porites* rubble, rounded and full of holes, 0.2 m, 26 Oct 1988, coll: K. Fauchald & L. Ward.
 F-265: E of CBC, at reef edge, *Agaricia* rubble, 12 m, 27 Oct 1988, coll: B. Littman & M. Carpenter.
 F-266: 100 m E of CBC, reef crest, rubble and algal turf with *Halimeda*, 1 m, 28 Oct 1988, coll: K. Fauchald & L. Ward.
 F-269: E of CBC, upper spur and groove of reef crest, rubble sample, 10 m, 29 Oct 1988, coll: B. Littman.
 F-270: E of CBC, inside reef crest, upper end of dead *Acropora palmata* type of coral, 0.2 m, 31 Oct 1988.
 F-274: NE end of Blue Ground range, N Coconas, rubble of *Acropora palmata*, 0.6 m, 1 Nov 1988, coll: K. Fauchald & D. Eibye-Jacobsen.
 F-275: E of CBC, spur and groove of reef crest, rubble and sand, 8 m, 2 Nov 1988, coll: B. Littman.
 F-278: Columbus Reef, N of Tobacco Cay, in shallows about 30 m from reef crest, rubble sample, 1 m, 3 Nov 1988, coll: M. Carpenter & L. Ward.
 F-279: as preceding, inside outer reef crest, rubble sample, 0.6 m.
 F-281: SW of CBC, S of boat ramp, sand and *Thalassia* bottom, in bunches of *Halimeda*, 1 m, 5 Nov 1988, coll: K. Fauchald & L. Ward.
 F-282: N of South Water Cay, sand and rubble flats about 100 m from reef crest, rubble sample, 1 m, 6 Nov 1988, coll: L. Ward.
 F-283: 10 m SW of CBC, S of boat ramp, bunches of *Halimeda*, 1 m, 7 Nov 1988, coll: L. Ward.
 F-285: E of CBC, spur and groove, rubble sample, 15 m, 7 Nov 1988, coll: B. Littman.
8. Collected by or for the author (material in ZMUC unless otherwise noted in text):
- DEJ-1: 600 m E of CBC, spur and groove, poorly sorted sand and *Halimeda* gravel, 12 m, 27 Oct 1988, coll: J. Norenburg, B. Littman & M. Carpenter.
 DEJ-2: 600 m E of CBC, at reef edge, dead *Agaricia*, 12 m, 27 Oct 1988, coll: J. Norenburg, B. Littman & M. Carpenter.
 DEJ-3: 50 m N of CBC, lagoon, dead *Porites*, 0.5 m, 28 Oct 1988, coll: K. Fauchald.
 DEJ-4: 50 m N of CBC, lagoon, dead *Porites*, 0.5 m, 28 Oct 1988, coll: D. Eibye-Jacobsen. (Type locality of *Eumida muriatica*, new species)
 DEJ-5: 500 m E of CBC, spur and groove, rubble and well-sorted sand, 9 m, 29 Oct 1988, coll: B. Littman.
 DEJ-6: 100 m E of CBC, lagoon just behind reef

- crest, dead *Acropora palmata*, 0.5 m, 31 Oct 1988, coll: K. Fauchald.
- DEJ-7: 75 m N of CBC, lagoon, dead *Porites*, 0.5 m, 1 Nov 1988, coll: D. Eibye-Jacobsen.
- DEJ-8: 250 m S of CBC, S channel, medium fine, well-sorted sand, 4.5 m, 2 Nov 1988, coll: J. Norenburg, B. Littman & M. Carpenter.
- DEJ-9: 200 m NE of CBC, outer edge of reef crest, dead *Acropora palmata*, 0.5 m, 2 Nov 1988, coll: V. Solis-Weiss.
- DEJ-10: 400 m E of CBC, spur and groove, dead *Agaricia* and sand, 8 m, 2 Nov 1988, coll: B. Littman.
- DEJ-11: Cochas, E of Blue Ground Range, dead *Acropora palmata*, 0.5 m, 3 Nov 1988, coll: K. Fauchald & L. Ward.
- DEJ-12: N of Tobacco Cay, W of S end of Columbus Reef, just behind reef crest, dead *Porites*, 0.5 m, 3 Nov 1988, coll: D. Eibye-Jacobsen.
- DEJ-13: as preceding, dead *Acropora palmata*, 0.6 m, coll: K. Fauchald.
- DEJ-14: 50 m S of CBC, lagoon, dead *Porites*, 0.3 m, 4 Nov 1988, coll: D. Eibye-Jacobsen. (Type locality of *Sige belizensis*, new species)
- DEJ-15: 200 m E of CBC, spur and groove, medium-fine, poorly sorted sand, 4.5 m, 4 Nov 1988, coll: J. Norenburg, B. Littman & M. Carpenter.
- DEJ-16: SW of CBC, S of boat ramp, sand bottom with *Thalassia*, in bunches of *Halimeda*, 1 m, 5 Nov 1988, coll: K. Fauchald & L. Ward.
- DEJ-17: N of Sand Bores, E of Blue Ground Range, dead *Acropora cervicornis*, 2 m, 5 Nov 1988, coll: D. Eibye-Jacobsen.
- DEJ-18: 150 m N of South Water Cay, just behind reef crest, dead *Porites*, 0.2 m, 6 Nov 1988, coll: D. Eibye-Jacobsen.
- DEJ-19: 600 m SE of CBC, spur and groove, fine sand with silt, 16 m, 7 Nov 1988, coll: J. Norenburg, B. Littman & M. Carpenter.
- DEJ-20: as preceding, dead *Acropora palmata*, coll: B. Littman.
- DEJ-21: 25 m W of CBC, scrapings from pier, sponges, tunicates, empty barnacles, *Halimeda*, 1 m, 7 Nov 1988, coll: D. Eibye-Jacobsen. (Type locality of *Nereiphylla mimica*, new species)
- DEJ-22: 200 m NE of CBC, spur and groove, sand, 8 m, 8 Nov 1988, coll: J. Norenburg, B. Littman & M. Carpenter.